



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,991	07/13/2006	Weiping Zeng	1691-0221PUS1	8865
2292 7590 12/15/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER PEPITONE, MICHAEL F	
			ART UNIT 1796	PAPER NUMBER
			NOTIFICATION DATE 12/15/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/585,991	<b>Applicant(s)</b> ZENG ET AL.	
	<b>Examiner</b> MICHAEL PEPITONE	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1796

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto *et al.* (US 6,037,388) in view of Nishimura *et al.* (US 5,281,641), when taken with Wakumoto *et al.* (US 5,122,061).

Regarding claims 1, 3-4, and 8: Hashimoto *et al.* teaches a polymerization initiator composition {for dental adhesives} (1:14-20; 2:15-22) comprising 100 parts by weight organic boron compound, specifically partially oxidized tributyl boron (2:45-49); 10 to 150 parts by weight of an aprotic solvent having a boiling point of 30 to 150 °C, specifically hexane (2:65-3:6)

Art Unit: 1796

Hashimoto *et al.* does not teach 0.2 to 5 parts of an alcohol having a boiling point of 60 to 180 °C [instant claim 1], specifically ethanol [instant claims 3-4 and 8]. However, Nishimura *et al.* teaches a dental adhesive composition comprising a polar organic compound (alcohol), in an amount of 10 mol % or less {based on amount of boron} [specific alcohols include isoamyl alcohol, bp 132 °C] (1:4-7; 1:61-2:8; 3:1-3; 3:17-26; 4:39). Hashimoto *et al.* and Nishimura *et al.* are analogous art because they are concerned with a similar technical difficulty, namely the preparation of dental adhesive compositions containing organoboron initiators. At the time of invention a person of ordinary skill in the art would have found it obvious to have combined a polar organic compound (alcohol), as taught by Nishimura *et al.* in the invention of Hashimoto *et al.*, and would have been motivated to do so since Nishimura *et al.* suggests that such polar organic compounds (alcohol) provide a decrease in the curing rate which results in an increase of the adhesion strength (3:30-23), and is an equivalent alternative means of providing a dental adhesive composition containing organoboron initiators.

Wakumoto *et al.* provides evidence for ethanol as an alcohol for use in dental adhesives containing organoboron initiators (1:5-6; 1:46-64; 6:50-52; Table 1, ex. 8).

Regarding claim 2: Hashimoto *et al.* teaches hexane {alkane} (2:65-66).

Regarding claim 5: Hashimoto *et al.* teaches a dental adhesive comprising 30 to 90 parts by weight of a polymerizable monomer; 0 to 60 parts by weight of a (meth)acrylate polymer; and 1 to 30 parts by weight of initiator composition, based on 100 parts by weight of the total composition (4:13-25).

Regarding claim 6: Hashimoto *et al.* teaches (meth)acrylates monomers (4:26-67; 13:33-40).

Art Unit: 1796

Regarding claim 7: Hashimoto *et al.* teaches polymethyl methacrylate (3:28-48; 11:34-37; 13:33-40).

### ***Response to Arguments***

The rejection of claims 1-7 based on Hashimoto *et al.* (US 6,037,388), Nishimura *et al.* (US 5,281,641), and Wakumoto *et al.* (US 5,122,061) is maintained for reason of record and following response.

Nishimura *et al.* (US 5,281,641) discloses a dental adhesive composition comprising a polar organic compound (alcohol), in an amount of 10 mol % or less {based on amount of boron} {specific alcohols include isoamyl alcohol, bp 132 °C} (1:4-7; 1:61-2:8; 3:1-3; 3:17-26; 4:39). The adhesive filler contains an alcohol, which increases the adhesion strength {with a concomitant decrease in curing rate} (3:17-26); wherein the alcohol is added to the curing agent [boron compound] {initiator} (2:6-9; 2:44-46; 3:1-3; 3:23-26; 3:44-54; 4:34-44).

In response to applicant's argument that Nishimura *et al.* (US '641) does not teach the alcohol suppresses the heat generation without reducing polymerization activity {when added in a specific small amount, 0.5 to 5 pbw}, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Wakumoto *et al.* provides evidence for ethanol as an alcohol for use in dental adhesives containing organoboron initiators (1:5-6; 1:46-64; 6:50-52; Table 1, ex. 8).

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL PEPITONE whose telephone number is (571)270-3299. The examiner can normally be reached on M-F, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/  
Supervisory Patent Examiner, Art Unit 1796

MFP  
2-December-08